

**BOARD OF ENVIRONMENTAL REVIEW**  
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**DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT (EA) FOR GENERAL  
REGISTRATION OF MINOR SOURCE NON-METALLIC MINERAL PROCESSING PLANTS**

1. *Description of Project.* The Board of Environmental Review (Board) is proposing to adopt rules allowing minor non-metallic mineral processing plants (NMMPP) to register with the Department of Environmental Quality (Department) under the requirements contained in New Rule I through New Rule XII in lieu of obtaining a Montana Air Quality Permit (MAQP) under the Administrative Rules of Montana (ARM) Title 17, chapter 8, subchapter 7. Rules for NMMPP would specify limits and conditions applicable to registered facilities. These limits and conditions would provide for the same level of environmental protection as the conditions contained in the MAQPs currently issued to these facilities. This Environmental Assessment is a programmatic analysis of the overall effect of regulating these operations under a rule allowing registration in lieu of permitting and applying self-implementing regulations instead of establishing permit conditions.

NMMPP operations could include crushing, screening, size classification, material handling, and storage operations. All of these processes can be significant sources of PM and PM<sub>10</sub> emissions if uncontrolled.

Quarried stone normally is delivered to the processing plant by front-end loader or truck and is dumped into a feeder hopper, usually a vibrating grizzly type, or onto screens. The feeder or screens separate large boulders from finer rocks that do not require primary crushing, thus reducing the load to the primary crusher. Jaw, impact, or gyratory crushers are usually used for initial reduction. The crusher product, normally 3 to 12 inches in diameter, and the undersized material are discharged onto a belt conveyor and usually are conveyed to a surge pile for temporary storage, or are sold as coarse aggregates.

The stone from the surge pile is conveyed to a vibrating inclined screen called the scalping screen. This unit separates oversized rock from the smaller stone. The undersize material from the scalping screen is considered to be a product stream and is transported to a storage pile and sold as base material. The stone that is too large to pass through the top deck of the scalping screen is processed in the secondary crusher. Cone crushers are commonly used for secondary crushing (although impact crushers are sometimes used), which typically reduces material to about 1 to 4 inches in diameter. The material from the second level of the screen bypasses the secondary crusher because it is sufficiently small for the last crushing step.

The output from the secondary crusher and the material from the secondary screen are transported by conveyor to the tertiary circuit, which includes a sizing screen and a tertiary crusher. Tertiary crushing is usually performed using cone crushers or other types of impact crushers. Oversize material from the top deck of the sizing screen is fed to the tertiary crusher. The tertiary crusher output, which is typically about 3/16th to 1 inch in diameter, is returned to the sizing screen. Various product streams with different size gradations are separated in the screening operation. The products are conveyed or trucked directly to finished product bins, open area stockpiles, or to other processing systems. Power to operate these crushing systems can come from existing line power or most often comes from diesel-fired engines. Engines range in size from approximately 250 horsepower to 1000 horsepower. These engines operate electrical generators or some other means of supplying mechanical energy to the crusher.

2. *Benefits and Purpose of Project:* The benefits and purpose of the project are to more efficiently allocate Department air quality staff toward permitting and compliance activities associated with larger, more complex sources. The proposed rules would provide for clear and consistent regulation of sources within this source category (NMMPP) while maintaining protection of public health, welfare and the environment at the current level. These relatively small source permit actions currently require significant staff time to process and review. The operations are generally very similar with similar regulatory limits and environmental impacts. The Department issues approximately 100 permits within this source category per year. The proposed registration process would accomplish the intended goal.
3. *Alternatives Considered:* In addition to the proposed action, the Board considered the “no-action” alternative. The “no-action” alternative would be to maintain the current requirement to obtain a MAQP under ARM Title 17, chapter 8, subchapter 7. However, the “no-action” alternative would not accomplish the intended goal of increasing the effective use of Department staff and resources. The “no-action” alternative would continue to require permitting of NMMPP and would have the same environmental impact as the preferred alternative.
4. *A Listing of Mitigation, Stipulations, and Other Controls:* The proposed rules would include requirements limiting operations to levels that are protective of public health and welfare and the environment. The requirements contained in the proposed rules such as notification, emission limitations, operational controls, emission monitoring, record keeping and reporting requirements would provide protection of public health and welfare and the environment equivalent to regulation under the MAQP program.

Department staff would enforce the proposed rules by inspecting these facilities periodically, as well as reviewing the information each facility is required to submit on an annual basis. The process of enforcing these rules would be accomplished through administrative orders, stipulated penalties, and civil and criminal suits. These methods are no different from the current permit enforcement process. Facilities that violate the proposed rules would be subject to the enforcement capabilities of the Department including penalties of up to \$10,000 per day per violation.

Regulation of NMMPP under the proposed new rules, which contain requirements equivalent to those currently imposed in MAQPs, would result in the same impact to physical and biological resources as requiring these sources to obtain permits under the no-action alternative. Federal and State requirements would be applicable to these sources, in addition to the proposed registration rules. Additional requirements include visible emission standards, process weight regulations, New Source Performance Standards (NSPS) for emission control requirements and Maximum Achievable Control Technology (MACT) standards to control Hazardous Air Pollutants (HAPs).

The proposed rules include conditions, emission limitations, and other requirements limiting operations to levels that would result in emissions that comply with all applicable National and Montana Ambient Air Quality Standards (NAAQS/MAAQS). Primary NAAQS/MAAQS, developed by the Environmental Protection Agency (EPA) and the Board, respectively, set emission levels that protect public health through the use of health effects data collected during ambient air quality studies. The primary standards have a level of safety inherent in the development of the standards to protect the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary NAAQS, set by EPA, are designed to be protective of public welfare, including, but not limited to, protection against harmful impacts to land and water environments, decreased visibility, and damage to animals, crops, vegetation, and buildings. Therefore, since the proposed rules would contain conditions, emission limitations, and other requirements similar to currently imposed permit conditions necessary to maintain compliance with applicable NAAQS/MAAQS, emissions from these sources operating under these rules would result in only minor impacts to these

physical and biological resources. Additional air quality impacts are discussed in Section 6.F of this EA.

5. The registration rules would eliminate the requirement to obtain a permit. They would, therefore, remove regulatory restrictions on private property and decrease cost and delay to the regulated industry. Environmental protection standards would remain the same.
6. The following table summarizes the potential physical and biological effects of the proposed rules on the human environment. Permitting these sources through the “no-action” alternative has the same potential physical and biological effects.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

**SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:** The following comments have been prepared by the Board.

**A. Terrestrial and Aquatic Life and Habitats**

Emissions from NMMPP would result in impacts to this physical and biological resource in any project area. Also, the ground disturbance associated with the construction of new or modified sources within this source category would impact this physical and biological resource. However, these impacts would be minor.

NMMPP operations at a given location are typically temporary and any impacts resulting from these activities would be relatively minor and short lived. In addition, most of these operations would be in previously disturbed opencut pits used for these purposes. Furthermore, all opencut pits in which NMMPP would be allowed to operate under the proposed registration rules would have been permitted through the Department’s Industrial and Energy Minerals Bureau (IEMB) permitting process, including an EA analyzing the impacts resulting from development of the opencut pit, and reclamation is required under all opencut permits. If NMMPP propose operations at a new location requiring a permit through the IEMB, an EA would be conducted for the proposed project. Impacts analyzed through the IEMB permitting process include all of the impact categories analyzed in an EA for a MAQP. Any impacts to this physical and biological resource would be minor.

B. Water Quality, Quantity, and Distribution

NMMPP would result in only minor impacts to water quantity and distribution. Small amounts of water would be used for dust suppression. Water use would cause only a minor disturbance to these areas, since only relatively small amounts of water (estimated by IEMB at 5 gallons per minute) would be needed. Therefore, at most, only minor surface and groundwater quality impacts would be expected as a result of using water for dust suppression because only small amounts of water would be required and impacts on water quality from deposition of air pollutants would be minor.

C. Geology and Soil Quality, Stability, and Moisture

NMMPP operations are small by industrial standards, and NMMPP and would add little or no additional surface disturbance to the mining operation. Therefore, potential impacts to this physical and biological resource resulting from NMMPP emissions would be minor at their greatest.

D. Vegetation Cover, Quantity, and Quality

Potential impacts to this physical and biological resource resulting from NMMPP emissions would be minor. NMMPP locations would typically be small and temporary, and the sites would be reclaimed with native vegetation. Therefore, any impacts to vegetation cover, quantity and quality would be minor for these facilities.

E. Aesthetics

NMMPP would operate in existing open cut pits; therefore aesthetic impacts of the area where they will operate would be minor. The aesthetic impacts for NMMPP would be short lived due to the temporary nature of this industry.

F. Air Quality

NMMPP operations would be visible and would create additional noise while operating in an area. However, the proposed rules include conditions to control emissions, including visible emissions, from the plant. The crushing operation would be portable, and most of these facilities would operate on an intermittent and seasonal basis, and would be locating within an existing opencut pit, so that any visual and noise impacts from temporary facilities would be short-lived. Further, visual and noise impacts for all NMMPP would be subject to mitigation through requirements in the Opencut Mining Act and visual and noise impacts from the NMMPP operations would be minor. In addition, potential impacts resulting from ground disturbance and other construction activities at NMMPP are also discussed in Section 6.A.

Emissions from NMMPP include particulate matter (PM), particulate matter with an aerodynamic diameter less than 10 microns (PM<sub>10</sub>), oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). The primary pollutants would be PM and PM<sub>10</sub> emissions that range from less than 1 ton per year to 49.4 tons per year depending on the size and number of process units operating at a given facility. In addition, depending on the presence, size, and number of diesel engine(s) operating at a given site, NO<sub>x</sub>, CO, and VOC emissions would range from less than 1 ton per year to 99.4 tons per year. SO<sub>x</sub> emissions from NMMPP would range from less than 1 ton per year to 49.4 tons per year. However, typical SO<sub>x</sub> emissions from NMMPP are negligible. HAP emissions would range from less than 1 ton per year to 9.4 tons per year of any individual HAP and less than 1 ton per year to 24.4 tons per year of cumulative HAPs emissions. Typical HAPs emissions from NMMPP would fall well below major source HAP thresholds. NMMPP rules would require that emissions from a registered source

fall within these threshold limits in lieu of the requirement to obtain a MAQP. Emissions associated with NMMPP are relatively minor by industrial standards and any associated air quality impacts would be minor.

Under the proposed rules, in addition to meeting the emission requirements discussed above, NMMPP operating within a PM<sub>10</sub> nonattainment area must meet production limits established by the Department. These production limits were established through ScreenView air dispersion modeling using worst-case scenario assumptions for NMMPP operations. Further, NMMPP operating within a PM<sub>10</sub> nonattainment area must adhere to more stringent conditions including decreased opacity limits and additional operational emission control practices.

G. Unique Endangered, Fragile, or Limited Environmental Resources

Potential impacts to this physical and biological resource resulting from NMMPP emissions would be minor. NMMPP would operate within existing and previously disturbed opencut pits used for these purposes. According to previous correspondence from the Montana Natural Heritage Program, Natural Resource Information System (NRIS), there is low likelihood of impact to any known unique endangered, fragile or limited environmental resources given previous industrial disturbance within a given area. Further, under the proposed rules, NMMPP may operate by registration only in areas for which an opencut mining permit has been granted. Impacts for these resources will already have been evaluated in an EA.

H. Demands on Environmental Resources of Water, Air and Energy

Regarding the environmental resource of energy, NMMPP would operate under power generated from diesel-fired electric generators. These diesel-fired generators would be relatively small units by industrial standards and would therefore use relatively small amounts of fuel for this purpose. Energy demands for normal operations of NMMPP would be minor.

Being relatively small in size, NMMPP facility operations also would place only small demands on water and air for proper operation. Small quantities of water would be required to be used for dust suppression and would control emissions being generated at the site. Most of these facilities have intermittent and seasonal operations. However, impacts to air resources from an NMMPP would be minor because the source is a small industrial source of emissions and because air pollutants generated by the facility would be widely dispersed.

I. Historical and Archaeological Sites

NMMPP would operate within existing and previously disturbed opencut pits used for these purposes. According to previous correspondence from the Montana Historical Society, State Historic Preservation Office (SHPO), there is low likelihood of impact to any known archaeological or historic site given previous industrial disturbance within a given area. Further, under the proposed rules, NMMPP may operate by registration only in area for which an opencut mining permit has been granted. Impacts for these resources will already have been evaluated in an EA.

J. Cumulative and Secondary Impacts

The construction and operation of new or modified NMMPP would result in minor cumulative impacts to the physical and biological aspects of the human environment for any given area of operation. Potential cumulative impacts would be limited by the temporary operations of these sources. There could be cumulative impacts from pollutant deposition, such as particulate matter from the relatively few NMMPP located in urban areas, but these impacts would be minor due to the

small size of the operations in relation to typical urban industrial operations. Further, under the proposed rules, NMMPP may operate by registration only in areas for which an opencut mining permit has been granted. Impacts from the opencut mine will already have been evaluated in an EA.

Cumulative biological impacts would be minor because the proposed rules implement emissions and operational controls that would limit emissions to levels that would not cause or contribute to any significant impacts. These emission levels are the same limits that are currently required under MAQPs, which cause only minor cumulative physical and biological impacts.

7. The following table summarizes the potential economic and social effects of the proposed rules on the human environment. Permitting these sources through the “no-action” alternative has the same potential economic and social effects.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			X			Yes
B	Cultural Uniqueness and Diversity			X			Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities			X			Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals			X			Yes
L	Cumulative and Secondary Impacts			X			Yes

**SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS:** The following comments have been prepared by the Board.

**A. Social Structures and Mores**

The construction and operation of new or modified sources regulated under the proposed rules would result in minor, if any, impacts to this social and economic resource in any given area of operation. In addition, these locations would exist in previously disturbed opencut pits used for these purposes. Therefore, any impacts to this social and economic resource of a given area would have already been realized. Further, these opencut pits would have been permitted through the Department’s IEMB permitting process, including an EA. If NMMPP propose operations at a new location requiring a permit through the IEMB, an EA would be conducted for the proposed project. Impacts analyzed through the IEMB permitting process include all of the same impact categories analyzed in this EA. Any impacts to this social and economic resource of a given area would be minor.

**B. Cultural Uniqueness and Diversity**

Regulation of NMMPP under the proposed rules, which contain requirements equivalent to those currently imposed in MAQPs, would not result in any impacts to this economic and social resource.

C. Local and State Tax Base and Tax Revenue

The construction and operation of new or modified NMMPP would result in minor impacts to the local and state tax base and tax revenue of any given area of operation. NMMPP impacts to any local and state tax base and tax revenue would be minor because relatively few employees would be required to operate the facility and operations would be temporary, thereby, resulting in short term, intermittent, and minor impacts. In addition, the source would not pay additional property taxes, as the land used for operations would already have been taxed for these purposes. Any impacts to the local and state tax base and tax revenue of any given area of operation would be minor.

D. Agricultural or Industrial Production

The construction and operation of new or modified NMMPP would result in minor, if any, impacts to the agricultural or industrial production of any given area of operation. Furthermore, impacts to agriculture would already have been evaluated for the opencut pit mining operation. Impact to agriculture may occur while the opencut pit is active; however, once the operation is complete, the area may be returned to agricultural use such as grazing.

E. Human Health

Emissions from NMMPP under the proposed rules would result in minor impacts to human health. However, these rules would include conditions, emission limitations, and other requirements limiting operations to levels that would result in emissions that comply with all applicable NAAQS/MAAQS. Primary NAAQS, as set by the EPA, set limits to protect public health, including, but not limited to, the health of “sensitive” populations such as asthmatics, children, and the elderly. Therefore, the proposed rules would contain conditions, emission limitations, and other requirements similar to currently imposed permit conditions necessary to maintain compliance with applicable NAAQS/MAAQS; emissions from sources operating under these rules would result in only minor impacts to these economic and social resources. NMMPP are also regulated under the worker protection standards of the Mine Safety and Health Act. These laws protect the health and safety of employees of these operations. Additional air quality impacts are discussed in Section 6.F of this EA.

F. Access to and Quality of Recreational and Wilderness Activities

The construction and operation of new or modified sources regulated under the proposed rules would result in minor, if any impacts to access to and quality of recreational and wilderness activities of any given area of operation of NMMPP.

G. Quantity and Distribution of Employment

These sources do not employ large numbers of people on an individual basis; therefore the impact to the quality and distribution of employment would be minor. The impact to the quantity and distribution of employment from the NMMPP industry as a whole would also be minor.

H. Distribution of Population

Any impacts to this social and economic resource of any given area of operation would be minor. Because these facilities employ relatively few people, they would only have minor impacts on the general distribution of population.

I. Demands for Government Services

Government services would be required for rule and program development. The registration process would require less government services. In addition, the registered source of emissions would be subject to periodic inspections by government personnel. Demands for government services would be minor.

J. Industrial and Commercial Activity

Since the substantive requirements of the proposed rules, including emission controls, with monitoring, record keeping, reporting and fee assessment, would remain substantially the same as the “no action” alternative there would be only minor impacts on the level of activity in the NMMPP industry.

The construction and operation of new or modified NMMPP would result in minor, if any, impacts to industrial and commercial activity of any given area of operation. Most of these sources are temporary in nature but none of these sources would have more than minor impacts on industrial or commercial activity.

K. Locally Adopted Environmental Plans and Goals

The construction and operation of new or modified NMMPP would result in minor, if any, impacts to any locally adopted environmental plans and goals of any given area of operation. Local governments have the authority to regulate NMMPP through zoning ordinances. The conditions and limitations included in rules for NMMPP would be protective of any proposed project area.

Under the proposed rules NMMPP operating within a PM<sub>10</sub> nonattainment area must meet production limits established by the Department. These production limits were established through ScreenView air dispersion modeling using worst-case scenario assumptions for typical NMMPP operations. Further, NMMPP operating within a PM<sub>10</sub> nonattainment area must adhere to more stringent conditions including decreased opacity limits and additional operational emission control practices. The purpose of the additional requirements for operations within PM<sub>10</sub> nonattainment areas would be to ensure that NMMPP would not contribute to the area’s nonattainment status.

L. Cumulative and Secondary Impacts

The construction and operation of new or modified NMMPP would result in minor, if any, cumulative and secondary impacts to the social and economic aspects of the human environment for any area of operation. NMMPP operations typically have a small transient workforce. Therefore, areas of operation may see short-term beneficial secondary economic impacts from NMMPP operations, but because of the temporary nature of most of these operations, the impacts would be minor. Secondary temporary economic impacts from the relatively few permanent operations also would be minor, due to the relatively few people employed in this industry.

Recommendation: No EIS is required.

1. As documented in this EA, impacts of NMMPP operating under the proposed registration rules would not result in significant impacts to the human environment. Air quality protection requirements under the registration rules would be the same as the requirements that are imposed under the current air quality permit rules and mitigate air quality impact below the level of significance. Under the proposed rules, NMMPP could operate only in areas that have a permit under the Opencut Mining Act. Therefore, an EA on the operation would have been, or will be,

prepared at the time of processing that permit operation application. Impacts of the operation would, therefore, have been, or will be, evaluated at that time and appropriate mitigations imposed as a result of that analysis. Furthermore, NMMPP would create very minor or no additions to the impacts of the mine on the sit itself, such as impacts to geology, soils, vegetation, rare or unique biological resources, and cultural and historic resources.

2. Impacts of NMMPP operating under the proposed registration rules are evaluated under MEPA through the opencut permitting process. Under the proposed rules, NMMPP could operate only in areas that have been issued a permit under the Opencut Mining Act. Therefore, an EA on the operation would have been prepared at the time of processing that permit application.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Montana Department of Environmental Quality – Industrial and Energy Minerals Bureau

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau and Industrial and Energy Minerals Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

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Date: May 17, 2004